

ABSTRACT OF THE DISCLOSURE

On a given substrate are successively formed a buffer layer, a recording layer made of carrier induced ferromagnetic material, a metallic electrode layer via an insulating layer, to complete a nonvolatile solid-state magnetic memory as an electric field effect transistor. For recording, a first electric field is applied to the recording layer via the metallic electrode layer under a given external magnetic field, and then, a second electric field is applied to the recording layer via the metallic electrode layer so that the hole carrier concentration of the recording layer can be reduced lower than at the application of the first electric field, thereby to invert the magnetization of the recording layer and thus, realize recording operation for the recording layer.